

FURTHER NOTES ON THE LONCHAEIDAE (DIPT.), WITH DESCRIPTION
OF NEW SPECIES FROM AFRICA AND ASIA.

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Having received from the Imperial Bureau of Entomology more material of the family LONCHAEIDAE, I am in a position to give the following additional notes to my previous paper* on the Ethiopian species.

I think moreover it will be useful to offer a view of the Asiatic and Australian species at present known, as it seems that some of these flies (chiefly those of economic importance) are widely spread over the tropical countries of the Old World. Thus I have now found that the African *plumosissima* lives also in the Philippine Islands; and that the Oriental *citricola* is to be found also in Australia. The wide range of *aurea* (*splendida*) is already known.

THE SUBGENERA OF THE GENUS LONCHAEA, S.L.

In my previous paper (pp. 253-254) I have already shown that the genus *Lonchaea* may be divided into three natural groups, which are well characterised structurally and ethologically. These groups may be considered at present as subgenera, but further studies will probably show their generic rank.

For the first group (type *chorea*, Fabr.) and the second group (type *lasiophthalma*, Macq.) there are already the names *Lonchaea*, s. str., and *Dasyops*, Rond. I will propose here the name *Carpolonchaea*, subgen. nov., for the mainly tropical species of the third group with feathered arista and with two sternopleural bristles (type *plumossissima*, Bezzi). The proposed name indicates the carpophilous habits of these species.

A new subgenus is probably to be erected for the reception of the somewhat aberrant *Lonchaea aurea* (*splendida*), which has a rather isolated position in the genus *Lonchaea*, s. str., on account of the different form of the head, the peculiar venation of the wings, the metallic colour of the body and the habits of the larva. The name *Lamprolonchaea*, subgen. nov., (type *aurea*=*splendida*) is proposed here for it.

THE ETHIOPIAN SPECIES.

In my previous paper 8 Ethiopian species of the genus *Lonchaea* were distinguished; as I have now received 5 other species, thus bringing the total number to 13, the following new table of distinctions is necessary:—

- 1(4). Antennae very short, widely separated at base, inserted a little below the middle of the eyes, with bare arista; eyes hairy; head considerably broader than the thorax, with a very broad frons in the female, and with short and thin macrochaetae; lunula very broad, open and roughly hairy; cheeks and jowls broad; sternopleurae with a single strong macrochaeta; mesopleurae with anterior macrochaetae not developed; wings shorter than the body, with the second costal cell not dilated outwardly, and with the sixth longitudinal vein destitute of spurious continuation (subgen. *Dasyops*, Rond.).

* This Bulletin ix, 3, March 1919, pp. 241-254, figs. 1-4.

- 2(3). Cheeks smooth ; tarsi with the 3 or 4 terminal joints black ; base of wings and squamulae yellowish *mochii*, Bezzi.
- 3(2). Cheeks rugose ; only the last tarsal joint black ; base of wings and squamulae blackish *phaeolepis*, sp. n.
- 4(1). Antennae longer, usually very long, closer together at base and inserted at or distinctly above the middle of the eyes ; eyes bare ; head not or only a little broader than the thorax, with less widened frons in the female, and with well developed macrochaetae ; lunula small, usually less visible and less or not hairy ; cheeks and jowls less broad, usually very narrow ; mesopleurae anteriorly with some strong macrochaetae, which are curved forwards ; wings longer than the body, with the second costal cell dilated outwardly and usually with the sixth vein with a long spurious continuation.
- 5(16). Arista bare or only microscopically pubescent ; only one sternopleural macrochaeta present ; tarsi always yellow at base ; squamulae whitish and with pale cilia.
- 6(7). Entire body, except head, of a very glistening green, more or less golden ; antennae short, with the third joint at most twice as long as the basal joints together ; jowls rather broad ; only the basal joint of all the tarsi yellow, with a black tip ; first posterior cell distinctly narrowed at end ; sixth longitudinal vein not at all continued (subgen. *Lamprolonchaea*, nov.) *aurea*, Macq.
- 7(6). Body of a shining bluish-black or black colour ; 2 or 3 basal joints of tarsi yellow ; first posterior cell not narrowed at end ; sixth longitudinal vein with spurious continuation (subgen. *Lonchaea*, s. str.).
- 8(11). Antennae rather short, extending only a little below the middle of the face, with the third joint at most twice as long as the basal joints together ; jowls rather broad.
- 9(10). Vibrissae not longer than usual ; wings yellowish hyaline . . . *claripennis*, Macq.
- 10(9). Vibrissae long and strong ; wings brownish *vibrissifer*, Lamb.
- 11(8). Antennae long, extending to the epistome, with the third joint many times longer than the basal joints together ; jowls linear.
- 12(13). Tarsi with only the basal joint yellow ; third antennal joint extending below the mouth-border ; wings brownish *lambiana*, Bezzi.
- 13(12). Tarsi with 2 or 3 basal joints yellow ; third antennal joint not extending below mouth-border ; wings hyaline, or faintly yellowish on fore half.
- 14(15). Antennae quite black ; wings slightly yellowish on fore half
continentalis, sp. n.

- 15(14). Antennae with the interior part of 2nd and 3rd joint yellowish ; wings quite hyaline *impressifrons*, sp. n.
- 16(5). Arista plumose or at least long-haired ; two strong sternopleural macrochaetae present ; antennae always extending to the mouth-border, or even below, with the third joint many times longer than the basal joints together ; jowls linear ; tarsi entirely black ; first posterior cell not narrowed at end (subgen. *Carpolonchaea*, nov). All the Ethiopian species here distinguished have white and pale hairy squamulae, and hyaline or pale yellowish wings.
- 17(24). Plumosity of the arista of medium length, being not or only a little broader than the breadth of the third antennal joint ; the plumules are moreover thin, straight and close together.
- 18(19). Last abdominal segment of the male longer than the two preceding ones together, deeply incised at end and there with the two points clothed with dense and long, bristly hairs *excisa*, Kert.
- 19(18). Last abdominal segment of the male not so formed, never specially ciliated.
- 20(21). Abdomen at end with the two last ventral plates inflated and prominent ; smallish species with bare scutellum *gibbosa*, de Meij.
- 21(20). Last ventral plates not so formed, never prominent ; scutellum more hairy.
- 22(23). Bluish species of smaller size (not over 4 mm.) ; plumosity of the arista broader than the breadth of third antennal joint ; wings quite hyaline *laevis*, sp. n.
- 23(22). Black species of greater size, plumosity of the arista as broad as the third antennal joint ; wings slightly but distinctly yellowish *ophyroides*, sp. n.
- 24(17). Plumosity of the arista very long, being twice as broad as the breadth of the third antennal joint ; the plumules moreover less thin, undulated and scattered *plumosissima*, Bezzi.

1. **Lonchaea (Dasyops) phaeolepis**, sp. nov.

Closely allied to *mochii*, Bezzi, from Erythraea, but smaller and at once distinguished by the characters given in the table.

♂ ♀. Length of the body, 3-3.2 mm. ; of the wing, 2.9-3 mm.

Head and its appendages as described for *mochii*, with the following differences : the frons lacks the greenish reflexions ; the cheeks in the upper part and the sides of frons in the anterior part with rather developed transverse furrows, being thus strongly rugose ; arista yellowish at base. Thorax and scutellum without distinct aeneous reflexions, and with the same chaetotaxy. Squamulae blackish, and with a blackish fringed border ; halteres black, with paler stalk. Abdomen as in *mochii*, but the ovipositor is distinctly shorter and broader. Legs of all the pairs with the tarsi entirely yellow, the last joint only being black. Wings proportionally shorter and broader, with the base deep blackish to the basal cross-veins ; the first posterior cell is not distinctly narrowed at end ; the sixth longitudinal vein is shorter.

Type ♂ and type ♀, and a single couple of specimens (British Museum) from Durban, Umbilo, 16.xi.1913 and 23.iii.1914 (*L. Bevis*). In the Cape Museum there is a specimen from Natal.

2. *Lonchaea* (*Lamprolonchaea*) *aurea*, Macq.

Of this interesting species I have seen in the Museum of Genoa specimens taken at S. Nicolas and S. Iago, Cape Verde Islands, in May and November 1898, by the late *L. Fea*; and in the Cape Museum specimens from the Transvaal.

3. *Lonchaea* (*Lonchaea*) *continentalis*, sp. nov.

Very closely allied to *lambiana*, Bezzi (*longicornis*, Lamb), from the Seychelles, and perhaps only a continental form of it, but seeming to differ in having the tarsi more broadly yellow at base, and in the wings not being brownish.

♂. Length of the body, 3–3.2 mm.; of the wing, 3.1–3.3 mm.

Head and its appendages entirely black; frons proportionally narrow, opaque, with shining vertical plates; lunula below white, shining; face quite flat and clothed with whitish dust, which is more shining at sides; antennae with the third joint extended to the mouth-border and with long, black, microscopically pubescent arista; palpi broad, with some bristly hairs. Chaetotaxy normal. Thorax and scutellum shining black, not dusted at all, with bluish reflexions on the back; chaetotaxy normal; mesopleurae with bristly hairs on the middle, 2–3 bristles curved backwards at hind border, and 2 bristles curved forwards at anterior border; sternopleurae with only one strong bristle; scutellum with some hairs at border between the usual bristles. Squamulae white and white-fringed; halteres black. Abdomen shining black and black-haired; it has no special ciliation at the tip, nor prominent genitalia; the last segment is simple and only a little longer than the preceding one. Legs black, with the two basal joints of all the tarsi yellow. Wings hyaline, slightly greyish on the fore half; second longitudinal vein quite straight; terminal portions of the 3rd and 4th veins parallel; small cross-vein a little before the middle of the discoidal cell; the spurious continuation of the 6th vein is only faintly indicated; second costal cell with normal dilatation.

Type ♂ and an additional specimen of the same sex (British Museum) from Natal, Durban, 28.ix.1916 (*C. P. v.d. Merwe*); another male specimen in the writer's collection from Erythraea, Ghinda, viii. 1916 (*Dr. A. Mochi*).

4. *Lonchaea* (*Lonchaea*) *impressifrons*, sp. nov.

Very similar to the preceding species, but of a more glistening bluish colour, with partly reddish antennae and with crystalline wings.

♀. Length of the body, 2.6 mm.; of the wing, 2.8 mm.

Frons rather narrow for a female, opaque, with shining ocellar and vertical plates; before the ocelli there is a distinct ovate depression; lunula shining white; face rather shining, with a faint greyish dust. Antennae extending to the mouth-border, with the second joint and the rather broad third joint broadly reddish on the interior side, the last only on the basal half; arista not very long, microscopically pubescent; palpi and proboscis black. Thorax and scutellum very glistening bluish; chaetotaxy as in the preceding species, scutellum with 2–3 bristly hairs. Squamulae and halteres as in the preceding. Abdomen very shining, but less bluish than the back of mesonotum; ovipositor about 1 mm. long. Legs black, the tarsi with the two basal joints and part of the third joint pale yellowish. Wings as in the preceding species, but proportionally broader, they are quite crystalline, even at fore border; veins very pale yellowish.

Type ♀, a single specimen (British Museum) from Gold Coast, Accra, iv. 1916, "in laboratory" (*Dr. J. W. S. Macfie*).

5. **Lonchaea (Carpolonchaea) laevis**, sp. nov.

A shining, bluish-black species with quite hyaline wings, distinct in the male sex owing to the not prominent genitalia and the simple last abdominal segment; from *plumosissima* it is distinguished by its smaller size and the shorter plumosity of the arista.

♂ ♀. Length of the body, 3·5–3·8 mm.; of the wing, 3·8–4 mm.

Frons black, opaque or with faint sericeous reflexions, the vertical and ocellar plates bluish and shining; in the female it is only $1\frac{1}{2}$ times as broad as that of the male. Antennae entirely black, with the third joint extended to the epistome, three times as long as the basal joints together; arista yellowish at base, its plumosity broader than the breadth of the third antennal joint, the plumules close together and straight. Lunula black, but the prominence between the base of the antennae is white-dusted; face greyish-dusted; palpi and proboscis black; jowls linear, vibrissae not specially developed. Thorax very glistening on the back and there with bluish reflexions, black on the pleurae; mesopleurae on anterior border with 3, and on posterior border with 3 bristles, in the middle with a tuft of bristly hairs; sternopleurae with 2 strong bristles, which are curved upwards. Scutellum more aeneous, faintly dusted, with short bristly hairs at border. Halteres black; squamulae white and with white cilia. Abdomen coloured and shining like the back of mesonotum but without bluish reflexions; last segment of male not elongated or ciliate; genitalia not visible; ovipositor as long as the last two segments together. Legs entirely black; middle femora with complete and long ciliation on hind side. Wings quite hyaline and with pale yellowish veins; second costal cell very much dilated outwardly; last portions of 3rd and 4th veins parallel; small cross-vein before the middle of the discoidal cell and before the end of the first longitudinal vein; chitinised part of the sixth vein short, but the spurious continuation extended to the hind border; hind cross-vein quite straight, and longer than its distance from the end of the fifth vein.

Type ♂, type ♀ and an additional specimen (British Museum) from Zanzibar (*Dr. W. M. Aders*); some other specimens of both sexes in the writer's collection from Erythraea, Ghinda, August–December 1916 (*Dr. A. Mochi*).

6. **Lonchaea (Carpolonchaea) ophyroides**, sp. nov.

Also closely allied to *plumosissima*, but easily distinguishable on account of its greater size and the much shorter plumosity of the arista.

♂ ♀. Lengths of the body, 4·2–4·5 mm.; of the wing, 4·5–4·8 mm.

Head as described for *plumosissima*, but the antennae with the third joint not extending below the oral margin, and with the arista much more shortly plumose, the breadth of the plumosity being not broader than the breadth of the third antennal joint and the plumules being thin, dense, and quite straight. All the rest of the body, legs and wings as in *plumosissima*; but the abdomen is aeneous, without bluish reflexions; the ciliation at hind side of middle femora is more developed; the wings are distinctly yellowish-fuscous on the fore half.

Type ♂, type ♀ and an additional female specimen (British Museum) from British East Africa, Kabete, 28.viii.1914 "on window" (*T. J. Anderson*); a female specimen without antennae from N. Nigeria, Zarda, "ovipositing in vegetable marrow" (*P. H. Lamb*) seems also to belong here.

7. *Lonchaea* (*Carpolonchaea*) *plumosissima*, Bezzi.

In fully coloured specimens the wings are sometimes yellowish fuscous on the fore half.

There are specimens from the type locality, Gold Coast, Aburi, January–February 1911, "from kola pod" (*L. Armstrong*); and from the same locality, 1912–13 (*W. H. Patterson*); and moreover a male specimen from British East Africa, Embu, 24.viii.1914 (*G. St. J. Orde-Browne*); thus showing that the species is present even in the east of the Ethiopian Region.

Puparium. Of the specimens reared from kola pods there is also a puparium, this is elongate, about 4 mm. long, of a shining reddish colour; the segmentation is not well marked; the skin is hard, finely rugulose; the posterior spiracular tubercles are small, black, rounded, approximated, and projecting for about the length of their diameter.

THE INDO-AUSTRALIAN SPECIES.

The Indo-Australian species of *Lonchaea*, *s.l.*, were tabulated by Dr. Kertész as long ago as 1901; many species have been added since by Prof. de Meijere and by me. All the subgenera are well represented, with the exception of the subgenus *Dasyops*, of which no Oriental or Australian species are at present known; even in the very numerous Dipterous galls from Java, described by W. and J. Docters van Leeuwen-Reijnvaan, 1901–1916, it seems that there are no galls referable to these flies.

The species at present known, with the addition of some new ones, can be distinguished as follows:—

- 1(8). Arista bare or only microscopically pubescent; only one sternopleural bristle; legs always with the tarsi partly yellow; squamulae white or pale yellowish and with whitish cilia.*
- 2(3). Metallic species of golden green colour, with rather short antennae and rather broad jowls; first posterior cell distinctly narrowed at end; tarsi with only the basal joint yellow, with a black tip . . . *aurea*, Macq.
- 3(2). Black or bluish-black species with narrow jowls and long antennae, the third joint of which is many times longer than the basal ones and reaches the epistome; first posterior cell not narrowed at end; tarsi more broadly yellow.
- 4(5). Only the basal joint of all the tarsi yellow, but that entirely so; wings yellowish; species more than 4 mm. long *megacera*, Kert.
- 5(4). The second joint of all the tarsi also yellow; wings wholly hyaline; species not over 3 mm. long.

* The *Lonchea? consentanea*, Walker 1860, from Macassar and Gilolo, of which the author says nothing about the colour of tarsi, is described as having *white halteres*, and thus cannot be a member of this genus.

- 6(7). Hypopygium very small, without prominent appendages; thorax black; jowls rather broad *minuta*, de Meij.
- 7(6). Hypopygium with a long curved appendage below; thorax aeneous; jowls linear *pugionata*, de Meij.
- 8(1). Arista more or less plumose, even if sometimes rather shortly; two sternopleural bristles; legs with entirely black tarsi (with the single exception of *pallicarpa*); jowls always narrow; antennae always long, with the third joint many times longer than the basal joints together and reaching the epistome.*
- 9(20). Squamulae dark or blackish, and with blackish cilia; thorax and scutellum never pollinose.
- 10(13). Wings hyaline and with pale yellowish veins.
- 11(12). Arista with long plumosity; scutellum with numerous bristly hairs at border between the usual bristles; length of body about 5 mm.
citricola, Bezzi, ♂.
- 12(11). Arista with shorter plumosity; scutellum with a few short hairs near the apex; length of body about 3 mm. *ficiperda*, Bezzi, ♂.
- 13(10). Wings very dark, blackish or brownish, with dark veins.
- 14(15). Third antennal joint a little yellowish near the base; hypopygium with a broad and strong appendage below; smaller species, about 3 mm. long.
cupraria, de Meij. ♂.
- 15(14). Third antennal joint quite black; hypopygium not so formed, without prominent appendage below, species 4-5 mm. long.
- 16(17). Abdomen violaceous, shining.. .. . *biróvi*, Kert. ♂.
- 17(16). Abdomen black.
- 18(19). Abdomen rather opaque in the middle *atrátula*, Walk. ♂.†
- 19(18). Abdomen entirely shining *obscuripennis*, de Meij. ♂.
- 20(9). Squamulae white or pale yellowish, with whitish cilia.
- 21(22). Tarsi yellowish; scutellum bare; wings broad, with the third longitudinal vein ending before the tip of wing *pallicarpa*, sp. nov.
- 22(21). Tarsi entirely black; wings less broad, with the third vein ending at tip of wing.
- 23(26). Arista rather shortly plumose, the breadth of the plumosity being narrower than the breadth of the third antennal joint; scutellum not or less pilose.
- 24(25). Thorax and scutellum not pollinose; 3 mm. *calva*, Bezzi.
- 25(24). Thorax posteriorly and scutellum pollinose; 4 mm. .. *pollinosa*, Kert.
- 26(23). Arista with longer plumosity, which is at least as broad as the third joint.
- 27(28). Abdomen dull black, a little shining towards the base of the sides; 3 mm.
montana, Brun.

* The species *Lonchaea? punctipennis*, Walker 1860, from Macassar, and *Lonchaea? inops*, Walker 1859, from Aru, Mysol and Ceram, evidently do not belong to the present genus.

† Walker, who describes only the female, says nothing about the colour of the squamulae, which are assumed here to be blackish (according to the colour of the wings), at least in the male sex.

- 28(27). Abdomen entirely shining.
- 29(38). End of the abdomen in the male without special conformation and without prominent genitalia.*
- 30(37). Plumosity of the arista not twice as broad as the third antennal joint, with straight plumules.
- 31(32). Wings brownish, darker on the fore border and apical half.
albisquama, Kert.
- 32(31). Wings hyaline or more or less deep yellowish.
- 33(36). Species of greater size (4-5 mm.), with deep yellow wings.
- 34(35). Frons of the female with 3 longitudinal furrows .. *cyaneonitens*, Kert.
- 35(34). Frons of the female with 2 furrows only *bisulcata*, sp. nov.
- 36(33). Species of smaller size (3.5 mm.), with hyaline or slightly yellowish wings ; frons of the female not distinctly sulcate .. *filifera*, Bezzi.
- 37(30). Plumosity of the arista twice as broad as the third joint, with undulate scattered plumules *plumosissima*, Bezzi.
- 38(29). Abdomen of the male at end with special conformation or with prominent genitalia.
- 39(40). Last abdominal segment of the male twice as long as the preceding one, deeply excised at end and there with the 2 points clothed with long bristly hairs ; hypopygium small *excisa*, Kert.
- 40(39). Last abdominal segment not so elongate and not excised at end.
- 41(42). Last abdominal segment simple, but with long black hairs at sides, ciliated ; hypopygium small and not prominent below, but with a horizontally produced middle appendage *setifera*, de Meij.
- 42(41). Last abdominal segment not specially ciliated at sides ; hypopygium very prominent below.
- 43(44). Hypopygium properly small, but the last two ventral segments inflated and prominent in the shape of a rounded protuberance.
gibbosa, de Meij.
- 44(43). Abdomen at end not gibbous beneath, but the genitalia prominent in the shape of a broad and stout appendage, which is bilobate at end
lucens, de Meij.

1. ***Lonchaea (Lamprolonchaea) aurea***, Macq. 1851.

Lonchaea splendida, Loew, 1873.

Lonchaea metatarsata, Kertész, Term. Füzet., xxiv, 1901, p. 83 ; de Meijere, Tijds. v. Ent., li, 1908, p. 133 ; liii, 1910, p. 117 ; lviii, 1915, p. 90 ; lx, 1918, p. 350 ; Edwards, Trans. Zool. Soc., xx, 1915, p. 422.

This little fly seems to be the most widely spread species of its genus ; in the Orient it is recorded from South India. The synonymy with *metatarsata* is quite certain, as I have seen a specimen from Batavia (*Jacobson*) in the Indian Museum, determined by Prof. de Meijere. *L. metatarsata* was originally described from New

* Of *cyaneonitens* and *bisulcata* only the females are known ; the males are here assumed to have a simple abdomen.

Guinea, and Prof. de Meijere has recorded it from Java and Sumatra. *L. splendida* is recorded from Australia, New South Wales; and Froggatt (Austr. Insects, 1908, p. 308) says that it has a wide range from the Pacific Islands and New Zealand, over Australia; thus the *L. splendida*, Broun 1905, for which I have proposed the new name of *brouniana*, is probably the same species.

I have before me specimens from the Philippine Islands: Luzon, Laguna, Los Baños and Mt. Maquiling (*C. F. Baker*;) and Panay Culasi, vi. 1918 (*R. C. MacGregor*).

2. **Lonchaea (Lonchaea) minuta**, de Meijere.

Lonchaea minuta, de Meijere, Tijds. v. Ent., liii, 1910, p. 116, and lx, 1918, p. 350.

Described from Java, I have before me a specimen from Malacca, Kelantan, and another from the Philippines, Batbatan Isl., vi. 1918 (*R. C. MacGregor*).

3. **Lonchaea (Carpolonchaea) citricola**, Bezzi.

Lonchaea citricola, Bezzi, Philipp. Jl. Sci., viii, D., 1913, p. 319.

Of this species, described from the Philippines, Los Baños, there are in the collection submitted to me by the Imperial Bureau two male specimens from Australia, N. Territories, Darwin, 11.v.1914 (*G. F. Hill*). They agree perfectly with the types, and have been bred from larvae from rotten oranges.

4. **Lonchaea (Carpolonchaea) ficiperda**, Bezzi.

Lonchaea ficiperda, Bezzi, Philipp. Jl. Sci., viii, D., 1913, p. 320.

I have seen other specimens of this species, likewise from the Philippines, Batbatan Isl., vi. 1918 (*R. C. MacGregor*).

5. **Lonchaea (Carpolonchaea) atratula**, Walker.

Lonchaea atratula, Walker, Proc. Linn. Soc. Zool., iv, 1860, p. 146; Kertész, Term. Füzet., xxiv, 1901, p. 84.

If I have correctly interpreted this species, it is distinguished by its greater size, blackish and dark-fringed squamulae, blackish wings and the dullish disc of the abdomen. It is probable that *biroi*, Kert. from New Guinea, and *obscuripennis*, de Meij., from Java, belong to this same species.

Originally described from Macassar, I have seen specimens from Singapore (*C. F. Baker*) and from the Philippines, Mindanao, Butuan (*C. F. Baker*).

6. **Lonchaea (Carpolonchaea) pallicarpa**, sp. nov.

Very distinct from all the other known species of the subgenus *Carpolonchaea* from the Old World on account of the yellowish tarsi; characteristic are also the broad wings, with diverging third and fourth veins.

♀. Length of the body, 3 mm.; of the wing, 3.2 mm.

Head black; frons flat, not sulcate, broad, being only a little longer than broad, with sericeous reflexions on the middle, and with glistening and bluish vertical plates. Antennae black, with the third joint a little brownish along the inner border and reaching the epistoma, being about three times as long as the basal joints; arista with long plumosity which is as broad as the breadth of the third antennal joint;

the plumules thin and straight. Vibrissae and lateral bristles of the mouth-border but little developed; palpi and proboscis black. Thorax black and very shining, with distinct bluish reflexions on the back; dorsal hairs very short; chaetotaxy normal; mesopleurae with two anterior and three posterior bristles; two strong sternopleural bristles. Scutellum rather aeneous and faintly dusted, quite bare except for the usual bristles; squamulae white and white-fringed; halteres black. Abdomen like the mesonotum, but without bluish reflexions; ovipositor 1 mm. long. Legs black, with the two basal joints of all the tarsi reddish yellow; middle femora with complete ciliation on hind border. Wings proportionally broad, quite hyaline, with pale yellowish veins; the terminal portions of the 2nd, 3rd and 4th veins are straight, gradually and equally diverging, so that the third ends a little before the tip of the wing; small cross-vein before the middle of the discoidal cell; hind cross-vein straight, only a little longer than its distance from the end of the fifth vein, sixth vein with spurious continuation to the hind border.

Type ♀, a single specimen in Prof. Baker's collection from the Philippines, Baguio, Benguet (*C. F. Baker*).

7. *Lonchaea (Carpolonchaea) bisulcata*, sp. nov.

A shining black species of proportionally greater size, with deep yellow wings; distinguished by the bisulcate frons of the female.

♀. Length of the body, 4 mm.; of the wing, 4.2 mm.

Frons proportionally narrow, a little less than twice as long as broad; it is dullish black, with sericeous reflexions and with shining black vertical plates; in front of the ocellar plate there is a rounded depression, from the sides of which emerge two rather deep furrows, which converge towards the antennae, ending separately at the upper border of the lunula. Antennae wanting in the type. Face black, greyish-dusted, with rather shining antennal grooves; cheeks linear; jowls narrow; palpi and proboscis black; chaetotaxy normal. Thorax shining black, with no distinct bluish reflexions; chaetotaxy normal; two equally strong sternopleural bristles. Scutellum aeneous and faintly dusted, with numerous bristly hairs between the usual bristles. Squamulae yellow, with pale yellowish cilia; halteres black. Abdomen coloured and shining like the mesonotum, with black hairs and short black bristles on the sides; ventral membrane broad and reddish, ventral plates shining black; ovipositor short, as long as the last two abdominal segments together. Legs entirely black; middle femora with rather short but complete ciliation on hind side. Wings yellowish, deeper yellow at base and on fore half; veins yellowish, but the costa appearing darker on account of its short black ciliation; second costal cell but little widened outwardly; terminal portions of third and fourth veins parallel, not diverging; small cross-vein before the middle of the discoidal cell; hind cross-vein straight, about twice as long as its distance from the end of the fifth vein; sixth vein with spurious continuation.

Type ♀, a single specimen in the writer's collection from South India, Trichinopoly, 1911 (*F. Cajus*); the chaetotaxy of the thorax and the black tarsi, in spite of the want of the antennae, show that the species belongs to the subgenus *Carpolonchaea*.

The present species may be the Indian *Lonchaea* without specific name figured by Howlett in Maxwell-Lefroy, *Indian Insect Life*, 1909, p. 636, fig. 420, from Pusa,

of which he says, "fairly common blue-black *Lonchaea* sometimes seen sitting on leaves in the neighbourhood of excrement." But these last words may prove that it is a *Lonchaea*, *s. str.*

8. ***Lonchaea* (*Carpolonchaea*) *filifera***, Bezzi.

Lonchaea filifera, Bezzi, Philipp. Jl. Sci., viii, D., 1913, p. 320.

Of this species, which seems to be common in the Philippine Islands, I have seen other specimens from Luzon, Laguna, Los Baños and Mt. Maquiling (*C. F. Baker*), and from Manila, x. 1918 (*R. C. MacGregor*).

The yellow penis is not always visible; the female is characterised by the broad, dull black frons.

9. ***Lonchaea* (*Carpolonchaea*) *plumosissima***, Bezzi, 1919.

Of this African species I have seen a male specimen from the Philippines, Luzon, Los Baños (*C. F. Baker*), which agrees perfectly in the arista with the typical specimens from the Gold Coast; it has a deep black, quite opaque frons, and the wings deep yellowish-fuscous on the fore half.

10. ***Lonchaea* (*Carpolonchaea*) *excisa***, Kertész.

Lonchaea excisa, Kertész, Term. Füzet., xxiv, 1901, p. 87; de Meijere, Tijds. v. Ent., li, 1908, p. 133; liii, 1910, p. 118, pl. 7, fig. 50; lx, 1918, p. 350.

Of this, in the male sex, very characteristic species, originally described from Singapore and recorded from Java and Simalur, there are in the Imperial Bureau Collection specimens from Ceylon, Peradeniya, 1918 (*N. K. Jardine*), and from the same locality, 8.vi.1915 (*Green*); also from South India, Coimbatore, 17.vii.1912. In the Philippines it is a common species, caught in different localities of Luzon and of Mindanao by *C. F. Baker* and *R. C. MacGregor*; I have also seen specimens taken at Singapore by Prof. Baker.

11. ***Lonchaea* (*Carpolonchaea*) *setifera***, de Meijere.

Lonchaea setifera, de Meijere, Tijds. v. Ent., liii, 1910, p. 119, pl. vii, fig. 52; lx, 1918, p. 350.

Even this species, described from Java and recorded from Simalur and New Guinea, is common in the Philippines, as I have seen specimens from Los Baños and Mt. Maquiling (*C. F. Baker*); from Manila (*R. C. MacGregor*); from Leyte, Tacloban (*C. F. Baker*).

12. ***Lonchaea* (*Carpolonchaea*) *lucens***, de Meijere.

Lonchaea lucens, de Meijere, Tijds. v. Entom., liii, 1910, p. 118, pl. vii, fig. 51; lx, 1918, p. 350.

Originally described from Java and recorded from Sumatra, I have seen specimens from the Philippines: Luzon, Los Baños (*C. F. Baker*) and Panay, Culasi, v. 1918 (*R. C. MacGregor*).

ON THE FEMALES OF THE SUBGENUS CARPOLONCHAEA FROM THE ORIENT.

The females of this group are for the most part unknown, even Prof. de Meijere having described only males. Those known to me are not easy to distinguish. I have not seen females of the species with dark squamulae, except that of my *ficiperda*, which has however whitish squamulae; it is therefore possible that even the species *citricola* and *atrátula* have the squamulae differently coloured in the two sexes. Of *birói*, *cupraria* and *obscuripennis* only the males are known; of *atrátula*, Walker, the author has described the female, but it is possible that he was mistaken as to the sex of his specimen.

The females known to me may be distinguished as follows :

- 1(2). Arista with very short plumosity, which is much narrower than the breadth of the third antennal joint *calva*, Bezzi.
 - 2(1). Plumosity of the arista longer, at least equal to the breadth of the third antennal joint, or nearly so.
 - 3(4). Tarsi yellowish; frons broad; third and fourth longitudinal veins diverging *pallicarpa*, Bezzi.
 - 4(3). Tarsi quite black; third and fourth veins parallel at end.
 - 5(16). Plumosity of the arista not twice the breadth of the third antennal joint, with straight plumules.
 - 6(11). Frons broad, not twice as long as broad.
 - 7(8). Frons of an opaque, deep black colour; arista rather shortly plumose *filifera*, Bezzi.
 - 8(7). Frons rather shining, with sericeous reflexions; arista with longer plumosity.
 - 9(10). Wings yellowish fuscous *lucens*, de Meij.
 - 10(9). Wings hyaline *setifera*, de Meij.
 - 11(6). Frons narrower, twice as long as broad.
 - 12(13). Ovipositor about as long as the abdomen *ficiperda*, Bezzi.
 - 13(12). Ovipositor much shorter than the abdomen.
 - 14(15). Wings deep yellowish; frons with a deep depression and with two longitudinal furrows converging anteriorly; species of greater size *bisulcata*, Bezzi.
 - 15(14). Wings hyaline or slightly yellowish; frons without basal depression and without marked furrows; species of smaller size *excisa*, Kert.
 - 16(5). Plumosity of the arista twice as long as the breadth of the third antennal joint, with undulated plumules, which are more thick and more scattered than usual; frons narrow *plumosissima*, Bezzi.
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